

WHAT IS CLAIMED IS:

1. A door driving unit comprising:
a driving mechanism rotatable in a reciprocating manner within a
5 predetermined operational angle range;
a body portion fixed to a vehicle body;
a first member driven by the driving mechanism;
a second member driven by the first member by being in contact with the
first member; the first member and the second member being supported by
10 a common shaft; and
an engaging mechanism for engaging the first member and the second
member with each other so that the first member and the second member
rotate as a unit with each other within a first predetermined angle range
when the first member drives to rotate the second member.
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2. Door driving unit according to claim 1, wherein the first member includes
at least one contacting portion which becomes in contact with the second
member when the first member rotates in one direction and engages with
the engaging mechanism through a contacting wall formed at the body
20 portion within a second predetermined angle range.
3. Door driving unit according to claim 2, wherein the first member includes
an output gear that is arranged within a space defined in the body portion.

4. Door driving unit according to claim 2, wherein the second member includes a driving arm having a flange portion formed at an outer peripheral portion of the driving arm, an arc portion formed at an edge portion of the flange portion along a third predetermined angle range with respect to the common shaft, and a pair of shoulder portions formed at both ends of the arc portion respectively and extending outwardly in radial direction of the arc portion.
5. Door driving unit according to claim 4, wherein the engaging mechanism includes a pair of hooks each assembled to the flange portion provided at the shoulder portion via a shaft.
6. Door driving unit according to claim 3, wherein the contacting portion includes a driving pin provided on a side face of the output gear so as to project therefrom at right angles.
7. Door driving unit according to claim 5, wherein the contacting wall includes two arc walls partially and radially outwardly surrounding the respective hooks with respect to the common shaft.

8. Door driving unit according to claim 6, further comprising: a cam plate fixed to the output gear, and a neutral position detecting switch fixed to the body portion via a bracket for detecting a position of the driving pin.
- 5 9. Door driving unit according to claim 8, wherein the cam plate switches the neutral position detecting switch between ON status and OFF status when the driving pin rotates to reach the highest position thereof, at which the driving pin disengages from the hook.